09/018,632, filed on 02/04/1998, now

in-part of ⌃U.S. Patent Application Serial No.09/018,632, ~~which~~ ~~was filed on February 4, 1998,~~ both of which are assigned to the same assignee as the present application, and are incorporated by reference in their entirety."

In the Claims:

Please add new claims ~~58-82~~ as follows:

58. (New) The computer-implemented method of claim 57, wherein said final estimate is determined as a weighted combination of said first estimate and said third estimate.

59. (New) The computer-implemented method of claim 58, wherein said weighted combination is based upon a correlation between said crash test data and said at least one vehicle.

60. (New) A computer-implemented method, comprising:

receiving a damage rating for a subject vehicle, said damage rating comprising one of a plurality of preselected levels;

comparing said damage rating to a crash test damage rating to determine compliance with a predetermined rule, said crash test damage rating associated with a crash test vehicle related to said subject vehicle; and

estimating a change in velocity of said subject vehicle using data from said crash test vehicle if said comparing indicates compliance with said predetermined rule.

61. (New) The computer-implemented method of claim 60, further comprising performing said estimating iteratively to obtain a population of said change in velocity.

62. (New) The computer-implemented method of claim 61, further comprising providing said population of said change in velocity to a change in velocity combining module.

63. (New) The computer-implemented method of claim 60, wherein said plurality of preselected levels comprise values in accordance with severity of component damage.

64. (New) The computer-implemented method of claim 63, wherein said severity is determined with reference to repair/replace estimate information.

65. (New) The computer-implemented method of claim 60, wherein said predetermined rule comprises whether said crash test damage rating is greater than said damage rating.

66. (New) The computer-implemented method of claim 60, wherein said crash test vehicle is identical to said subject vehicle.

67. (New) The computer-implemented method of claim 60, wherein said crash test damage rating is derived from at least one of IIHS or CR crash test data.

68. (New) The computer-implemented method of claim 60, further comprising evaluating injury potential for an occupant of said subject vehicle based on said change in velocity.

69. (New) A computer-implemented method, comprising:

calculating a first change in velocity for a first vehicle using a first crash test change in velocity for a second

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vehicle, said first and second vehicles being involved in a collision;

calculating a second change in velocity for said second vehicle using a second crash test change in velocity for said first vehicle;

determining which of said first change in velocity and said second change in velocity are in closer agreement with said second crash test change in velocity and said first crash test change in velocity, respectively; and

selecting one of said first crash test change in velocity and said second crash test change in velocity for further processing based on which is in said closer agreement.

70. (New) The computer-implemented method of claim 69, wherein said further processing comprises combining said selected crash test change in velocity with at least one other estimate of change in velocity regarding said collision.

71. (New) The computer-implemented method of claim 70, wherein said at least one other estimate is based on deformation energy.

72. (New) The computer-implemented method of claim 70, further comprising evaluating injury potential for an occupant of one of said first and second vehicles based on said combined change in velocity.

73. (New) A computer-implemented method comprising:

obtaining damage information from a first vehicle and a second vehicle, said first vehicle and said second vehicle involved in a collision;

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estimating deformation energy absorbed by said first and second vehicles during said collision based on said damage information;

estimating principal forces on said first and second vehicles during said collision based on stiffness parameters and crush depth for each of said first and second vehicles;

estimating a coefficient of restitution for said collision;

estimating a closing velocity between said first vehicle and said second vehicle; and

determining a change in velocity for said first vehicle and said second vehicle based upon said coefficient of restitution and said closing velocity.

74. (New) The computer-implemented of claim 73, further comprising obtaining a distribution of said change in velocity using a plurality of parameter combinations.

75. (New) The computer-implemented method of claim 74, wherein said parameter combinations comprise at least one of the following: vehicle weight, said stiffness parameters, said crush depth, and said coefficient of restitution.

76. (New) The computer-implemented method of claim 73, further comprising determining whether an override/underrride condition existed in said collision.

77. (New) The computer-implemented method of claim 76, further comprising adjusting said stiffness parameters if said override/underride condition existed.

78. (New) The computer-implemented method of claim 73, further comprising evaluating injury potential for an occupant

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of one of said first and second vehicles based on said change in velocity of the respective one of the first and second vehicles.

79.(New) The computer-implemented method of claim 73, further comprising adjusting said stiffness parameters for at least one of said first and second vehicles if said principal forces are not substantially balanced.

80. (New) A computer-implemented method, comprising:

receiving a damage rating for a subject vehicle;

comparing said damage rating to a plurality of crash test damage ratings to determine compliance with at least one predetermined rule, said crash test damage ratings associated with crash test vehicles related to said subject vehicle; and

estimating a change in velocity of said subject vehicle using data from at least one of said crash test vehicles if said comparing indicates compliance with said at least one predetermined rule.

81. (New) The computer-implemented method of claim 80, wherein the at least one predetermined rule comprises a best fit between said plurality of crash test damage ratings and said damage rating.

82. (New) The computer-implemented method of claim 80, further comprising evaluating injury potential for an occupant of said subject vehicle based on said change in velocity.